

## ABSTRACT

A system is provided for adapting and customizing a reverse link beam and a forward link beam that couple a particular mobile unit with a base station for transmitting/receiving data. The forward and reverse links may be dynamically customized for changing data rate requirements, changing position of the mobile unit relative to the base station, and changing SNR. According to one aspect of the invention, a plurality of adaptive antenna elements for the forward and reverse links are located at the base station. In addition to conventional beam forming hardware, the beam forming circuitry of each antenna are coupled to a mobile location detector for detecting the location of a mobile unit with which the base station is communicating. Once the location of the mobile unit has been determined, the beamformer steers a customized narrow, high gain beam toward that mobile unit to form the desired link.

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